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WEDDLE, ALEXANDER MARION				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/593,364

**Applicant(s)**

BATEMAN ET AL.

**Examiner**

ALEXANDER WEDDLE

**Art Unit**

1712

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 October 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 5) ☒ Claim(s) 1-6,8-11,13,14,16-24,27-30,32-36 and 39-45 is/are pending in the application.
- 5a) Of the above claim(s) 3,8,9,13,14,16-22 and 28 is/are withdrawn from consideration.
- 6) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 7) ☒ Claim(s) 1,2,4-6,10,11,23,24,27,29,30,32-36 and 39-45 is/are rejected.
- 8) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11 October 2011 has been entered.

### ***Election/Restrictions***

2. Claims 3, 8-9, 12-22, and 28 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to the nonelected species, there being no allowable generic or linking claim.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-2, 4-6, 10-11, 23-24, 27, 29-30, 32-36, and 39-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "low molecular weight" in claims 1, 10, 11, 40, and 42 is a relative term which renders the claim indefinite. The term "low" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one

of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Examiner will consider the specifically named amines "low molecular weight".

Claim 1 recites "comprising a step of applying an activation treatment . . . wherein the activation treatment consists of an organic solvent . . . and halogenated solvents; an adhesion promoter . . . (PEI); amine and . . . glycols; dendrimers; low molecular weight amines; glycidylethers; and aziridines or combinations thereof; . . .". The recited feature is indefinite as ambiguous, because components, which are apparently considered elements of the group of adhesion promoter, are separated by semicolons, suggesting that the components are not in fact elements of the group of adhesion promoter, but are additional components in addition to an adhesion promoter (see Remarks 11 October 2011, p. 1, third paragraph, which states that the "amendment makes it clear that the activation treatment can only contain an organic solvent and adhesion promoter and optionally an additive). Furthermore, the phrase "or combinations thereof" suggests that the claim includes earlier components in a group, too. Examiner will consider the limitation to include the interpretation "adhesion promoter selected from linear and branched polyethylene imines (PEI), amine and/ or hydroxyl terminated polyether glycols, dendrimers, low molecular weight amines, glycidylethers, and aziridines or combinations thereof" (note that commas separate elements in the group of "adhesion promoter" and semicolons separate the recited steps).

The term "enhance" in claim 1 is a relative term which renders the claim indefinite. The term "enhance" is not defined by the claim, the specification does not

provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term will be interpreted to mean "increase."

Claim 1 recites the limitation "to enhance adhesion of

Claims 2, 4-6, 10-11, 23-24, 27, 29-30, 32-36, 39, and 44-45 are rejected as depending from rejected Claim 1.

Claim 40 recites "an activation treatment consisting of an organic solvent. . . and halogenated solvents; an adhesion promoter . . . (PEI); amine and . . . glycols; dendrimers; low molecular weight amines; glycidylethers; and aziridines or combinations thereof; . . ." The recited feature is indefinite as ambiguous, because components, which are apparently considered elements of the group of adhesion promoter, are separated by semicolons, suggesting that the components are not in fact elements of the group of adhesion promoter, but are additional components in addition to an adhesion promoter (*see* Remarks 11 October 2011, p. 1, third paragraph, which states that the "amendment makes it clear that the activation treatment can only contain an organic solvent and adhesion promoter and optionally an additive). Furthermore, the phrase "or combinations thereof" suggests that the claim includes earlier components in a group, too. Examiner will consider the limitation to include the interpretation "adhesion promoter selected from linear and branched polyethylene imines (PEI), amine and/ or hydroxyl terminated polyether glycols, dendrimers, low molecular weight amines, glycidylethers, and aziridines or combinations thereof" (note that commas

separate elements in the group of "adhesion promoter" and semicolons separate the recited components of the activation treatment).

The term "enhanced" in claim 40 is a relative term which renders the claim indefinite. The term "enhanced" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term will be interpreted to mean "increased."

Claim 41 is rejected for depending from rejected Claim 40.

Claim 42 recites "an activation treatment . . . consisting of an adhesion promoter . . . (PEI); amine and . . . glycols; dendrimers; low molecular weight amines; glycidylethers; and aziridines or combinations thereof; a solvent. . . and halogenated solvents; . . ." The recited feature is indefinite as ambiguous, because components, which are apparently considered elements of the group of adhesion promoter, are separated by semicolons, suggesting that the components are not in fact elements of the group of adhesion promoter, but are additional components in addition to an adhesion promoter (see Remarks 11 October 2011, p. 1, third paragraph, which states that the "amendment makes it clear that the activation treatment can only contain an organic solvent and adhesion promoter and optionally an additive). Furthermore, the phrase "or combinations thereof" suggests that the claim includes earlier components in a group, too. Examiner will consider the limitation to include the interpretation "adhesion promoter selected from linear and branched polyethylene imines (PEI), amine and/ or hydroxyl terminated polyether glycols, dendrimers, low molecular weight

amines, glycidylethers, and aziridines or combinations thereof" (note that commas separate elements in the group of "adhesion promoter" and semicolons separate the recited components of the activation treatment).

The term "enhance" in claim 42 is a relative term which renders the claim indefinite. The term "enhance" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The term will be interpreted to mean "increase."

Claim 43 is rejected as depending from rejected Claim 42.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-2, 23-24, 27, 29-30, 32-36, and 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birchall et al. (US 3,839,078) in view of Coyle et al. (US 3,570,748).

Regarding Claims 1-2, 40, and 42, Birchall et al. (US'078) teach a method of coating a substrate coated with a film, such as polyester, polyethylene, polyurethane, polycarbonate, or acrylic coating (col. 1, lines 41-42; col. 8, lines 18-23 and 29-47), by applying an activating treatment which consists of an organic solvent (col. 3, lines 44-45; col. 5, lines 38-43), an adhesion promoting layer or an adhesion promoting additive (Abstract; col. 3, lines 38-47; col. 9, lines 54-62; col. 11, lines 31-34), and an additive, such as aluminum phosphate (Abstract), monomer (col. 11, line 32), other additives (col. 6, lines 28-32). US'078 teaches that swelling an organic plastics material with a swelling agent like a solvent promotes adhesion (col. 3, lines 38-47 and lines 60-68); US'078 discusses this swelling treatment independently of additional treatments or agents which also may be used to improve adhesion in addition to the adhesion promoting swelling treatment. The swelling agent can swell a plastic surface (such as chlorophenol on a polyester film, col. 3, lines 44-45 or with a polyethylene film, col. 8,



lines 43-47) prior to a coating (col. 3, lines 42-47) to promote adhesion. US'078 teaches that the coated film product may be suitable as an ink-receptive surface as for logos (adhesive surface) (col. 10, lines 14-24 and 55-60).

US'078 fails to teach the recited adhesion promoters and does not specifically limit the type of adhesion promoter. Coyle et al. (US'748) teach a method of increasing the adhesion between a polyethylene substrate and other layers in a laminated film by treating the olefin coating, such as a polyethylene coating, by applying to a polyethylene film a linear or branched polyethylene imine, with a functional imine group (col. 3, lines 29-35; col. 1, lines 101-11 and 42-46; col. 2, lines 66-75). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process and activating agent of US'078 by including polyethylene imine in a composition which includes an organic solvent and an adhesion promoter, because US'078 teaches that the organic solvent works to promote adhesion of a polyethylene film to a substrate and US'748 teaches polyethylene imine as a particular adhesion promoter known to promote adhesion between a polyethylene and another layer. Examiner notes that the recited additive can include any combination of components disclosed in this reference or in the combination of references upon which the rejection is based in addition to the required organic solvent and adhesion promoter.

Regarding Claims 23-24, the combination of references is silent as to the concentration of adhesion promoter. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process of the combination of references by optimizing the concentration of adhesion promoter to within the recited

range in order to promote adhesion. Furthermore, generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical.

Regarding Claim 27, US'078 teaches that particularly useful solvents are the lower aliphatic alcohols (col. 2, lines 56-57) of which isopropyl alcohol is well-known. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process and composition of the combination of references with isopropyl alcohol, because it is a well-known lower aliphatic alcohol which US'078 teaches are useful solvents.

Regarding Claims 29-30, US'078 suggests that solvent is present in an amount less than about 99.9% and between about 50 to about 99.9% by weight (col. 24, lines 11-12). Furthermore, generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical.

Regarding Claim 32, the additive may include film formers, surfactants, and pigments and other components (col. 15, line 66 to col. 16, line 2; col. 9, lines 33-53 and 57-62; col. 2, lines 10-20).

Regarding Claim 33, neither Claim 1 nor Claim 33 specifies a particular additive or the function of the additive, and apparently any known additive can be included. The concentration of additive may be particular to a given application and/ or function of the additive which the claim does not define. (e.g. if a pigment, the amount of additive can be optimized to provide the desired appearance; if a surfactant, to provide the desired

surface tension). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process and composition of the combination of references for a given application by determining the concentration of an additive to within the recited range with a reasonable expectation of success. Furthermore, generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical.

Regarding Claims 34-35 and 43-45 US'078 suggests that a solvent can be applied before or at the same time as (*i.e.* mixing solvent with adhesion promoter) applying an adhesion promoter (col. 3, lines 38-48 and lines 60-68) and additive. Furthermore, it is *prima facie* obvious to perform the steps in any order and to split a single step into two.

Regarding Claim 36, US'078 teaches at least spray, brush, and dip are suitable ways of applying a coatings to a substrate (col. 6, lines 52-56).

Regarding Claim 39, US'078 teaches that excess solvent or adhesion promoter is removed by vacuum application (col. 6, lines 36-58).

Regarding Claim 41, the substrate can be metal or composite (col. 8, lines 18-20; col. 14, line 53 to col. 15, line 5).

9. Claims 4-6 and 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birchall et al. (US 3,839,078) in view of Coyle et al. (US 3,570,748) as applied to Claim 1 above, and further in view of Drawert et al. (US 3,499,853).

Regarding Claims 4-6 and 10-11, Coyle et al. (US'748) teach a method of increasing the adhesion between a polyethylene substrate and a polyamide (NYLON) layer (Abstract; Figs. 1-3). The above combination of references fails to teach a low molecular weight amine (nucleophilic amine functional group), such as those selected from 4, 7, 10 – trioxatridecane-1, 13 –diamine (TODA) and 4, 7 – dioxadecane-1, 10 – diamine (DODA). Drawert et al. (US'853) teach that TODA and DODA are favorable diamines as adhesion promoters for polyamides, since they increase adhesion and resistance to peeling (adhesion strength) and are soluble in organic solvents (col. 4, lines 2-5, 11-25 ). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the composition and process of the combination of references by including TODA or DODA in the “activation treatment,” because US'748 suggests that in some applications adherence of polyamide to polyethylene is desirable and US'853 suggests that TODA and/ or DODA will improve adhesion of polyamide adhesives.

10. Claims 1-2, 4-6, 23-24, 27, 29, 30, 32-36, 39-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Birchall et al. (US 3,839,078) in view of Hasegawa et al. (US 4,233,354).

Regarding Claims 1-2, 4-6, 40, and 42, Birchall et al. (US'078) teach a method of coating a substrate coated with a film, such as polyester, polyethylene, polyurethane, polycarbonate, or acrylic coating (col. 1, lines 41-42; col. 8, lines 18-23 and 29-47), by applying an activating treatment which consists of an organic solvent (col. 3, lines 44-45; col. 5, lines 38-43), an adhesion promoting layer or an adhesion promoting additive

(Abstract; col. 3, lines 38-47; col. 9, lines 54-62; col. 11, lines 31-34), and an additive, such as aluminum phosphate (Abstract), monomer (col. 11, line 32), other additives (col. 6, lines 28-32). US'078 teaches that swelling an organic plastics material with a swelling agent like a solvent promotes adhesion (col. 3, lines 38-47 and lines 60-68); US'078 discusses this swelling treatment independently of additional treatments or agents which also may be used to improve adhesion in addition to the adhesion promoting swelling treatment. The swelling agent can swell a plastic surface (such as chlorophenol on a polyester film, col. 3, lines 44-45 or with a polyethylene film, col. 8, lines 43-47) prior to a coating (col. 3, lines 42-47) to promote adhesion. US'078 teaches that the coated film product may be suitable as an ink-receptive surface as for logos (adhesive surface) (col. 10, lines 14-24 and 55-60).

US'078 fails to teach an adhesion promoter which has a nucleophilic alcohol or amine group. Hasegawa et al. (US'354) teach a printed polyester film, comprising a polyethylene glycol and disclose that it was conventional in the prior art to include polyethylene glycol, which inherently has a nucleophilic alcohol (hydroxyl-) group, to increase the adhesion of printing inks to polyester films (i.e. as an adhesion promoter) (Abstract; col. 1, lines 34-40). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process and composition of US'078 by including the conventional adhesion promoter polyethylene glycol in the "activation treatment" of US'078 for improving the adhesion of inks onto a polyester film coating.

Regarding Claims 23-24, the combination of references is silent as to the concentration of adhesion promoter. It would have been obvious to a person of ordinary

skill in the art at the time of invention to modify the process of the combination of references by optimizing the concentration of adhesion promoter to within the recited range in order to promote adhesion. Furthermore, generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical.

Regarding Claim 27, US'078 teaches that particularly useful solvents are the lower aliphatic alcohols (col. 2, lines 56-57) of which isopropyl alcohol is well-known. It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process and composition of the combination of references with isopropyl alcohol, because it is a well-known lower aliphatic alcohol which US'078 teaches are useful solvents.

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Regarding Claim 33, neither Claim 1 nor Claim 33 specifies a particular additive or the function of the additive, and apparently any known additive can be included. The concentration of additive may be particular to a given application and/ or function of the

additive which the claim does not define. (e.g. if a pigment, the amount of additive can be optimized to provide the desired appearance; if a surfactant, to provide the desired surface tension). It would have been obvious to a person of ordinary skill in the art at the time of invention to modify the process and composition of the combination of references for a given application by determining the concentration of an additive to within the recited range with a reasonable expectation of success. Furthermore, generally, differences in concentration will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration is critical.

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Regarding Claim 39, US'078 teaches that excess solvent or adhesion promoter is removed by vacuum application (col. 6, lines 36-58).

Regarding Claim 41, the substrate can be metal or composite (col. 8, lines 18-20; col. 14, line 53 to col. 15, line 5).

***Response to Arguments***

11. Applicant's arguments and amendments with respect to claims 1, 40, and 42 have been considered but are moot in view of the new ground(s) of rejection, necessitated by the current claim amendments.

Applicant has amended the independent claims to require a specific organic coating (Remarks, p. 1) which apparently does not include polyimides which formed the basis of the previous rejection. Therefore the previous rejections are moot, and new rejections are provided and necessitated by Applicant's amended claims.

***.Conclusion***

12. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER WEDDLE whose telephone number is (571)270-5346. The examiner can normally be reached on Monday-Thursday, 10:00 AM - 8:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571)272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. W./  
Examiner, Art Unit 1712

/Nathan H Empie/  
Primary Examiner, Art Unit 1712